

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the above-identified application. Deleted matter is indicated by strikethrough or double brackets, and added matter is indicated by underlining.

1. (Currently Amended) An optically transparent composite material comprising solid
Solid solution inorganic nanoparticles dispersed in a host matrix inert thereto, wherein said
nanoparticles are doped with one or more active ions at a level up to about 60 mole% and
consist consisting of particles having a dispersed particle size between about 1 and about 100
nm and said composite material with said nanoparticles dispersed therein has an attenuation
of less than 10 dB/cm and is optically transparent to wavelengths at which excitation,
fluorescence, or luminescence of said active ions occur.

2. (Currently Amended) The composite material doped nanoparticles of claim 1,
wherein at least one active ion is a rare earth element.

3. (Currently Amended) The composite material doped nanoparticles of claim 1,
wherein said inorganic nanoparticles comprise at least one metal oxide, halide, oxyhalide or
chalcogenide salt.

4. (Currently Amended) The composite material doped nanoparticles of claim 3,
wherein said metal inorganic nanoparticles are selected from the group consisting of
aluminosilicates, ZnS, ZnSe, PbS, PbSe, CdS and CdSe nanoparticles.

5. (Currently Amended) The composite material doped nanoparticles of claim 3,
wherein said inorganic nanoparticles comprise at least one metal fluoride or chloride salt.

6. (Currently Amended) The composite material doped nanoparticles of claim 1,
wherein said inorganic nanoparticles comprise at least one Group III, IV, or V semiconductor
element, or at least one Group III-V, Group II-V, or Group II-VI semiconductor compound,
doped with one or more active ions.

7. (Currently Amended) The composite material doped nanoparticles of claim 6,
wherein said inorganic nanoparticles comprise at least one Group III, IV, or V semiconductor

element selected from the group consisting of Si, Ga and As, doped with one or more active ions.

8. (Currently Amended) The composite material doped nanoparticles of claim 6, wherein said inorganic nanoparticles comprise at least one Group III-V semiconductor compound selected from the group consisting of GaAs, GaN and InN.

9. (Currently Amended) The A composite material comprising the doped nanoparticles of claim 1, wherein said dispersed in a host matrix is an consisting of an optically transparent material selected from the group consisting of optically transparent glass, optically transparent crystalline materials, optically transparent liquids and optically transparent polymers, wherein said host matrix is optically transparent to wavelengths at which excitation, fluorescence or luminescence of said active ions occur.

10. (Original) The composite material of claim 9, wherein said host matrix is a fluoropolymer.

11. (Cancelled)

12. (Currently Amended) The composite material of claim 1 [[9]], comprising between about 1 and about 60 vol.% nanoparticles.

13. (Currently Amended) A luminescent device comprising an optical element formed from the composite material of claim 1 [[9]].

14. (Original) The luminescent device of claim 13, wherein said device is a zero-loss link, upconversion light source, standard light source, volumetric display, flat panel display, or a source operating in a wave length/division/multiplexing scheme.

15. (Currently Amended) The luminescent device of claim 13, comprising a plurality of active ions different nanoparticles that, by virtue of the choice of host material or active ion dopant, upon excitation, fluorescence, or luminescence emit a plurality of overlapping emission bands.

16. (Currently Amended) The luminescent device of claim 13, comprising a plurality of active ions different nanoparticles that, by virtue of the choice of host material or active ion dopant, upon excitation, fluorescence or luminescence, emit a plurality of separate and distinct emission bands.

17. (Original) The luminescent device of claim 16, wherein said device is a volumetric display or a flat panel display.